Amendments to the Specification:

Please replace page 18 with the following amended content:

The light source produces a transmission spectrum as shown in Figure 4A (depending on the nature of light) wherein wavelength (λ) is plotted against intensity (T). The evanescent wave distribution at the core-cladding interface can be represented as in Figure 4B. It has a maximum intensity in proximity to the core and a taper in intensity away from the core. When a photosensitive indicator is immobilized within a porous ~~elass~~glass coating at the cladding denuded optical fiber, subsequently the transmission spectrum obtained is as shown in Figure 4C. The valley in the transmission spectrum is due to the absorbance of the photosensitive indicator at a specific wavelength.

The power transmission in an optical fiber, having an absorbing cladding, is given by the modified Beer-Lambert's law:

$$P(l) = P_0 \exp(\gamma l) \qquad (1)$$

where l is the distance along the unclad portion of the fiber, ~~PO~~P_0 is the power transmitted in the absence of an absorbing species and ~~(~~γ is the evanescent wave absorption coefficient.

The above equation can be rewritten as,

$$P(l) = P_0 \exp(r\alpha l) \qquad (2)$$

r is the fraction of the power transmitted through the cladding and ~~(~~α is the bulk absorption coefficient of the cladding. The evanescent wave absorbance 'A' from the previous equations as log ~~P0/P(l)~~$P_0/P(l)$.

$$A = \frac{\gamma l}{2.303} = \frac{r\alpha l}{2.303} \qquad (3)$$

Figure 5 shows a graph demonstrating another example of ~~another example of~~ results from the use of the biosensor. Two peaks are provided at proximity 480 and 640 nanometer wavelengths. Increasing results as shown between 0 minutes, 45 minutes and 60 minutes as plots 38, 39 and 40, respectively. The

Please replace the paragraph after EXAMPLE 4 *Staphylococcus mutans* with the following amended paragraph:

Staphylococcus mutans is a reliable indicator of a predisposition to dental caries. The outer coating of the sensor element of the present system was impregnated with sucrose. The sensor element was brought into contact with a sample containing *Staphylococcus mutans* which resulted in metabolism of sucrose to form ~~latie~~lactic acid and polysaccharides, thereby resulting in an optically detectable indicator.